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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------|------------------|
| 10/075,145 | 02/14/2002 | Bruce E. Dunne | 12472US01 | 6892 |
| 23446 | 7590 | 08/23/2005 | EXAMINER | |
| MCANDREWS HELD & MALLOY, LTD 500 WEST MADISON STREET SUITE 3400 CHICAGO, IL 60661 | | | TRAN, KHANH C | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 2631 | |

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/075,145

Applicant(s)

DUNNE ET AL.

Examiner

Khanh Tran

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-119 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-26 and 63-119 is/are allowed.
- 6) ☒ Claim(s) 27-57 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 February 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 2/14/02 & 12/08/03.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 27-31, and 58-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lehtimäki U.S. Patent 6,125,120.

Regarding claims 27, and 58, figure 1 illustrates a mobile communication system including mobile station (MS) 1, mobile station (MS) 2, and base station systems.

Referring to figure 1, the first base station system includes TRACU1 (Transcoding and Rate Adaptation Compression Unit), which corresponds to the claimed first processor, for enhancing signals transmitted in a first direction and in a second direction opposite the first direction.

Similarly, the second base station system includes TRACU2, which corresponds to the claimed second processor, for enhancing signals transmitted in a first direction and in a second direction opposite the first direction.

Lehtimäki does not teach a switch arranged as set forth in the application claim.

In column 12 line 25 via column 13 line 15, also see figure 1, in the case of mobile to mobile calls, if MS 1 and MS2 are half rate mobile stations MS, the situation is slightly more complicated. TRAU1 starts normal half rate operation and also starts

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sending half rate frames in the A interface direction to TRACU1. When TRACU1 receives these TRAU frames, it starts sending half rate TRAU frames to the A interface, and a tandem preventive connection has been formed between these units. TRACU1 also changes the vocoding mode employed in the interconnecting PCM link between the TRACUs into half rate coding and transfers the frames received from TRAU1 to TRACU2. TRAU2 and TRACU2 perform a similar procedure, and after this there is a non-tandem connection between the mobile stations MS1 and MS2 as both TRACUs are transferring half rate TRAU frames. Because TRACU1 also changes the vocoding mode employed in the interconnecting PCM link between the TRACUs into half rate coding and TRACU2 also sends TRAU frames at half rate, it would have been obvious for one of ordinary skill in the art at the time of the invention that signal enhancement in TRACU2 is switched into disable mode. Motivation is that TRACU2 does not change the vocoding mode and operates at half-rate.

Regarding claims 28, and 59, referring to figure 1, the claimed telephones correspond to the MSs 1 and 2 as taught in Lehtimäki invention.

Regarding claims 29, and 60, figure 1 discloses public switched telephone networks.

Regarding claims 30, and 61, the act of switching is implemented as software switch as appreciated by one of ordinary skill in the art.

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Regarding claims 31, and 62, as recited in claim 27, when TRACU1 receives these TRAU frames, it starts sending half rate TRAU frames to the A interface, and a tandem preventive connection has been formed between these units. The communication is carried out with PCM code speech signals.

Allowable Subject Matter

2. Claims 1-26 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 1, claim 1 is allowed over the prior art of record because the cited references cannot teach or suggest an apparatus arranged to enhance the quality of the communication signal as set forth in the application claim.

3. Claims 32-57 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 32, claim 32 is allowed over the prior art of record because the cited references cannot teach or suggest a method of enhancing the quality of the communication signal as set forth in the application claim.

4. Claims 63-93 are allowed.

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The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 63, claim 63 is allowed over the prior art of record because the cited references cannot teach or suggest an apparatus arranged to enhance the quality of the communication signal as set forth in the application claim.

5. Claims 94-119 are allowed.

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 94, claim 94 is allowed over the prior art of record because the cited references cannot teach or suggest a computer readable medium encoded with a computer program executable to perform functionality as set forth in the application claim.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Sourani U.S. Patent 6,512,790 B1 discloses "Method, System And Apparatus For Transmitting Coded Telecommunication Signals".

Shalem U.S. Patent 6,795,497 B1 discloses "Use Of End To End Compression Devices In Telecommunication Networks".

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Oshidari et al. U.S. Patent 5,896,449 discloses "Voice Enhancement System And Method".

Kushmaro et al. U.S. Patent 6,701,139 B1 discloses "Code Converter And A System Using Same".

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Khanh Tran whose telephone number is 571-272-3007. The examiner can normally be reached on Monday - Friday from 08:00 AM - 05:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KCT

Khanh Cong Tran

08/19/2005

Examiner KHANH TRAN